



STARS4ALL

STARS4ALL

Citizen science to save European nightscapes

IGB

Leibniz-Institute of
Freshwater Ecology
and Inland Fisheries

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STARS4ALL consortium

ALAN 5 13. Nov. 2018

Snowbird Utah

EU-Collective Awareness Platforms for Sustainability and Social Innovation



CAPS-projects are expected to support

- environmental awareness
- grassroots processes
- practices to share knowledge
- changes in lifestyle, production and consumption patterns
- more participatory democratic processes



- Projects started on 1/10/2014
- Projects started on 1/01/2016



Grassroots
Wavelengths

Share4R

Share4Rare



PTwist



Families_Share



ChildRescue

CAREABLES

open source hardware in healthcare

Made4You



DSISCALE

New CAPS-projects in
2018

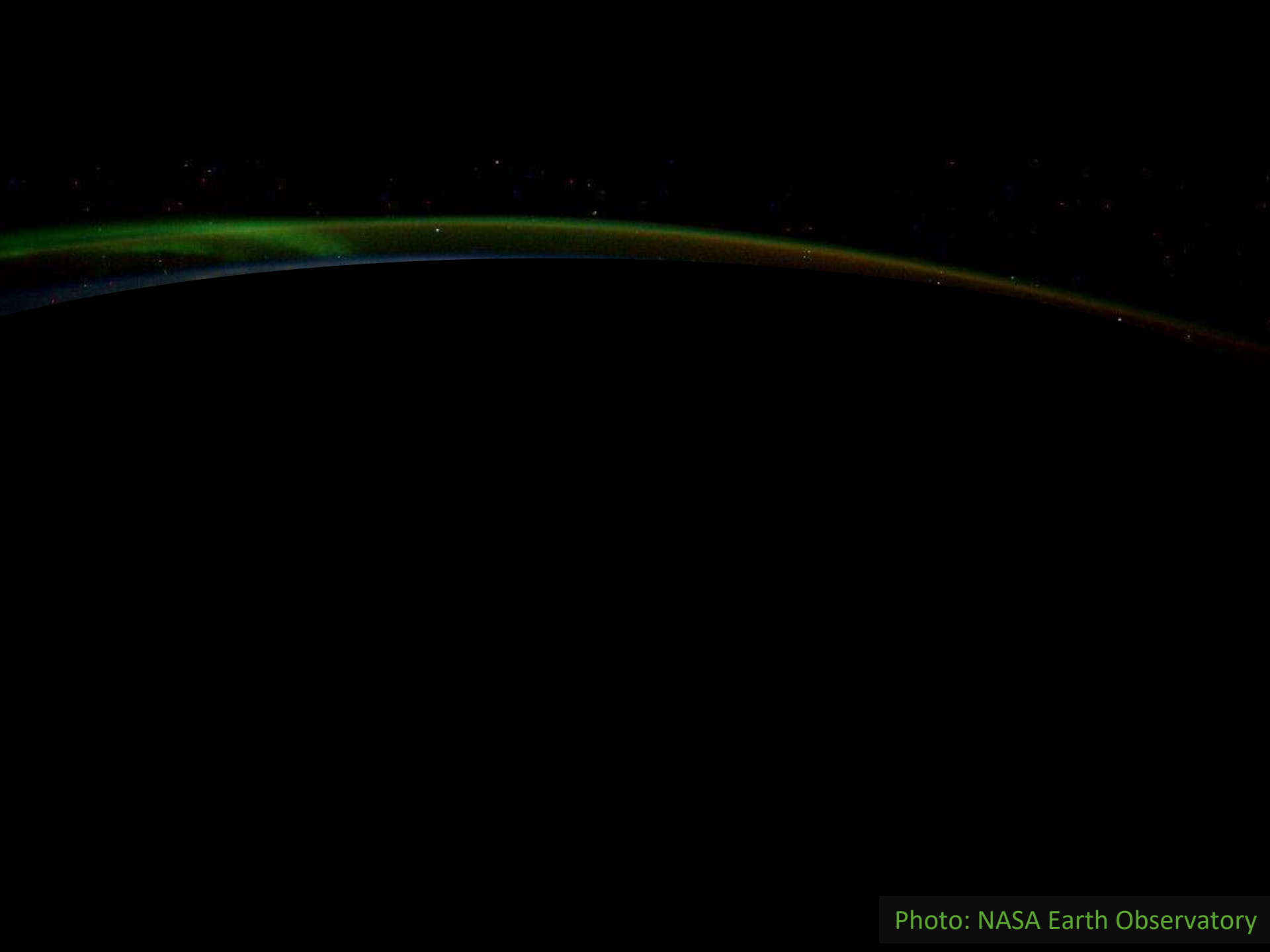


Photo: NASA Earth Observatory



Foto: NASA Earth Observatory

STARS4ALL

is an incubation platform for local or global working groups fighting or creating awareness about light pollution



STARS4ALL

- To increase citizens awareness about the problem of light pollution
- To invite the public to contribute
- To develop recommendations oriented towards consumers, industry, governments and public institutions
- To create a platform for citizen initiatives and actions

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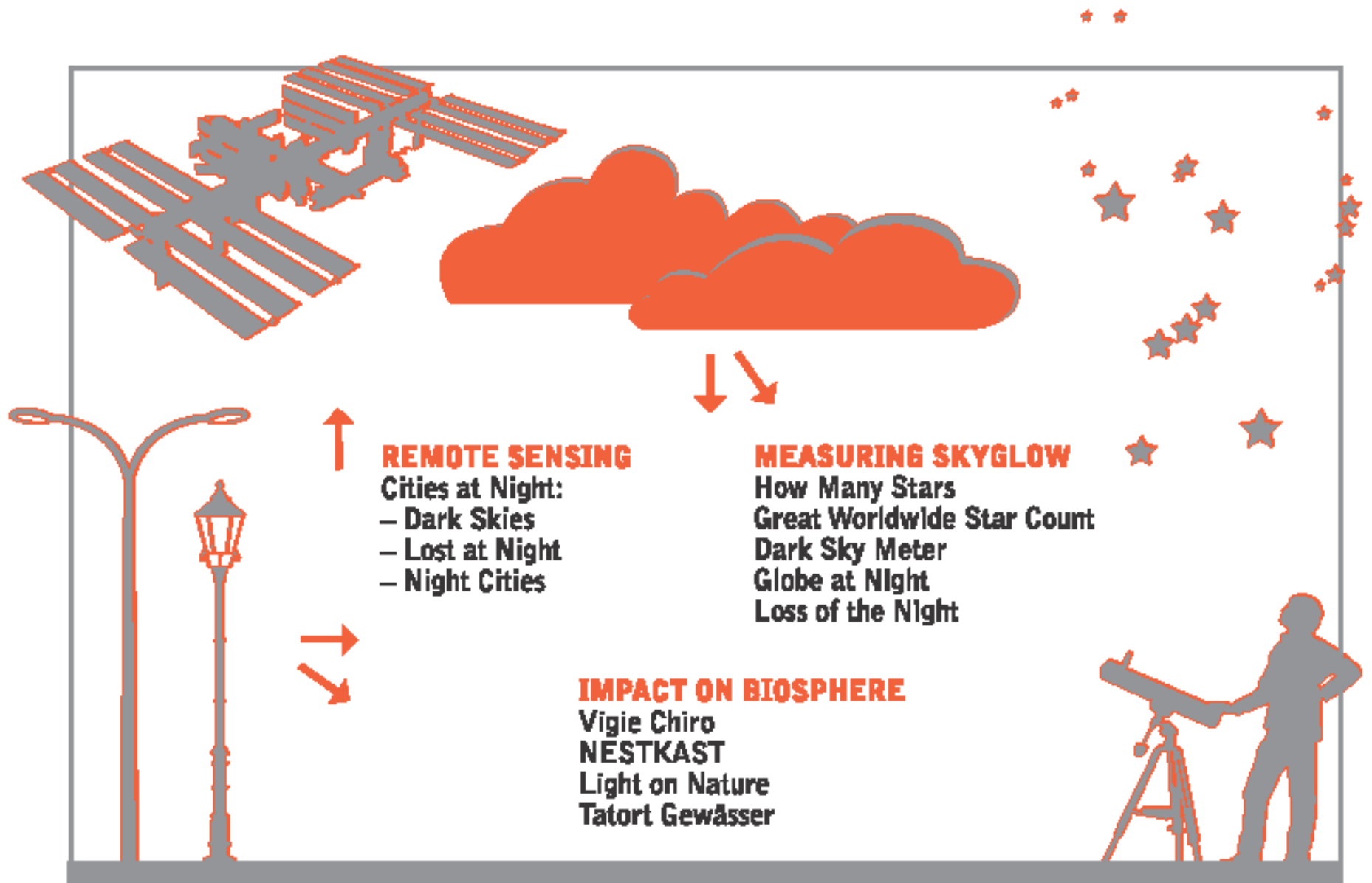


Illustration: A. Rothmund in Schroer et al. (2018) *Citizen Science – Innovation in Open Science, Society and Policy*. UCL Press, London. <https://www.ucl.ac.uk/ucl-press/browse-books/citizen-science>

<http://stars4all.eu/>

Be polite. Dim the Light



Light Pollution Initiatives

Initiatives or actions creating awareness about light pollution

- Measurements
- Documentations
- Education

Propose your own. It's very easy!!!



Have an idea



Write a brief description



Send us the proposal



Let's put it into practice

MEASUREMENTS

- Photometer Network
- Virtual Night + Sky eye
- Loss of the Night
- My Sky At Night
- Intercomparison campaigns
- NixNox
- Globe At Night
- Macaronesia
- Dark sky meter

ASTRONOMY & BEAUTY OF THE NIGHT

- Star parks
- Broadcasting events
- Nocturnal darkness in Europe

LIGHTS IN MY NEIGHBORHOOD

- The beauty and the beast
- Cities At Night
- Façade Lighting
- Liquen - Octal

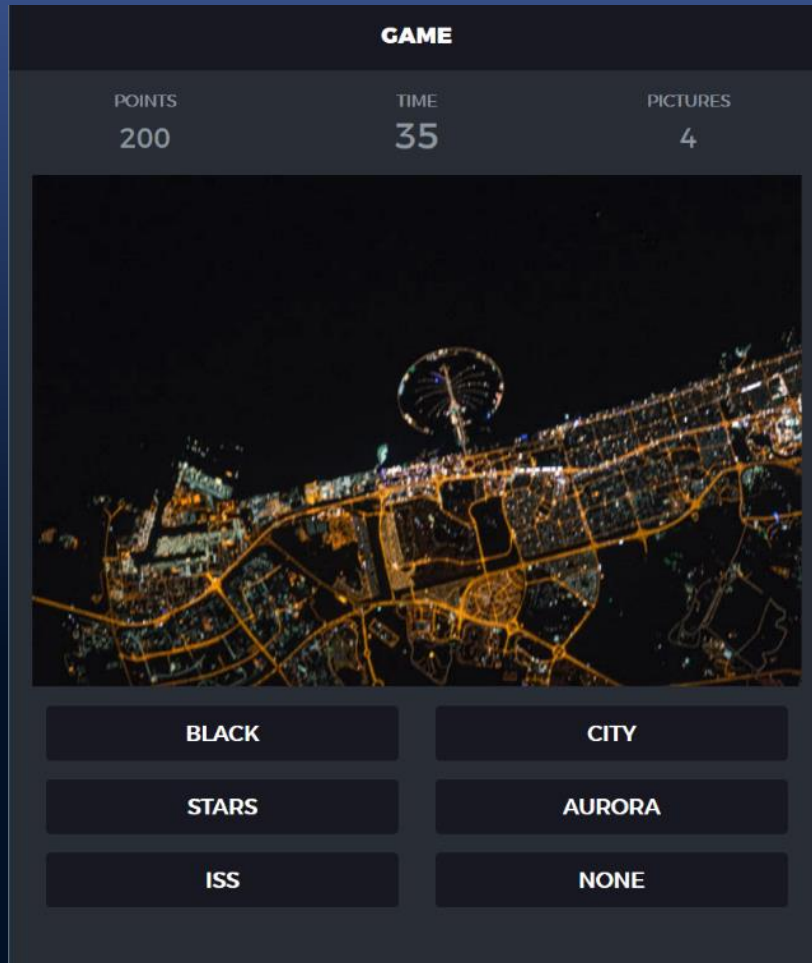
EDUCATION & AWARENESS

- Light Pollution Outreach
- STARSthruQL
- Buimetria participativa
- Education on LP. Portugal & Spain

MOVEMENTS FOR POLICIES

- European Sky Protection
- Lighting Quality Label
- Empower Citizen Actions

Gamification: Cities at Night – Night Knights



Competition	before	after
Time span	> 8 months	< 1 month
Classified photos	~ 4,000	~ 22,000
Throughput (tasks/hour)	44	212
Average life play ALP (time/user)	11 min	103 min
Expected contribution (task/user)	8.7	203

TESS photometer

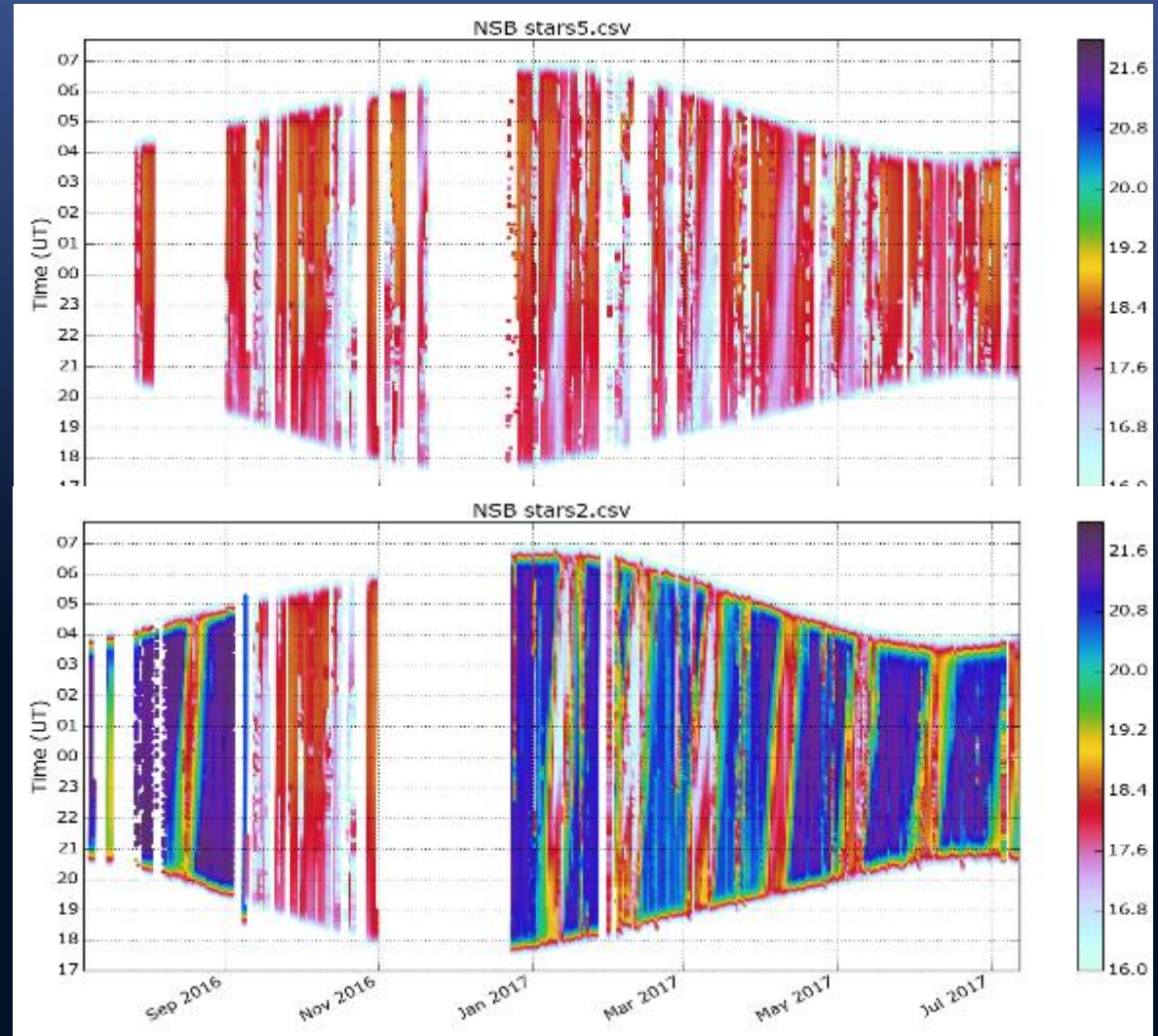
- The Telescope Encoder and Sky Sensor (TESS) is a compact device that monitors zenith *sky brightness* every night
- Open hardware
- permanently sending data remotely to a network
(Weatherproof enclosure+ WIFI)
- ***Extra features.*** Anti-condensation heating, cloud detector...



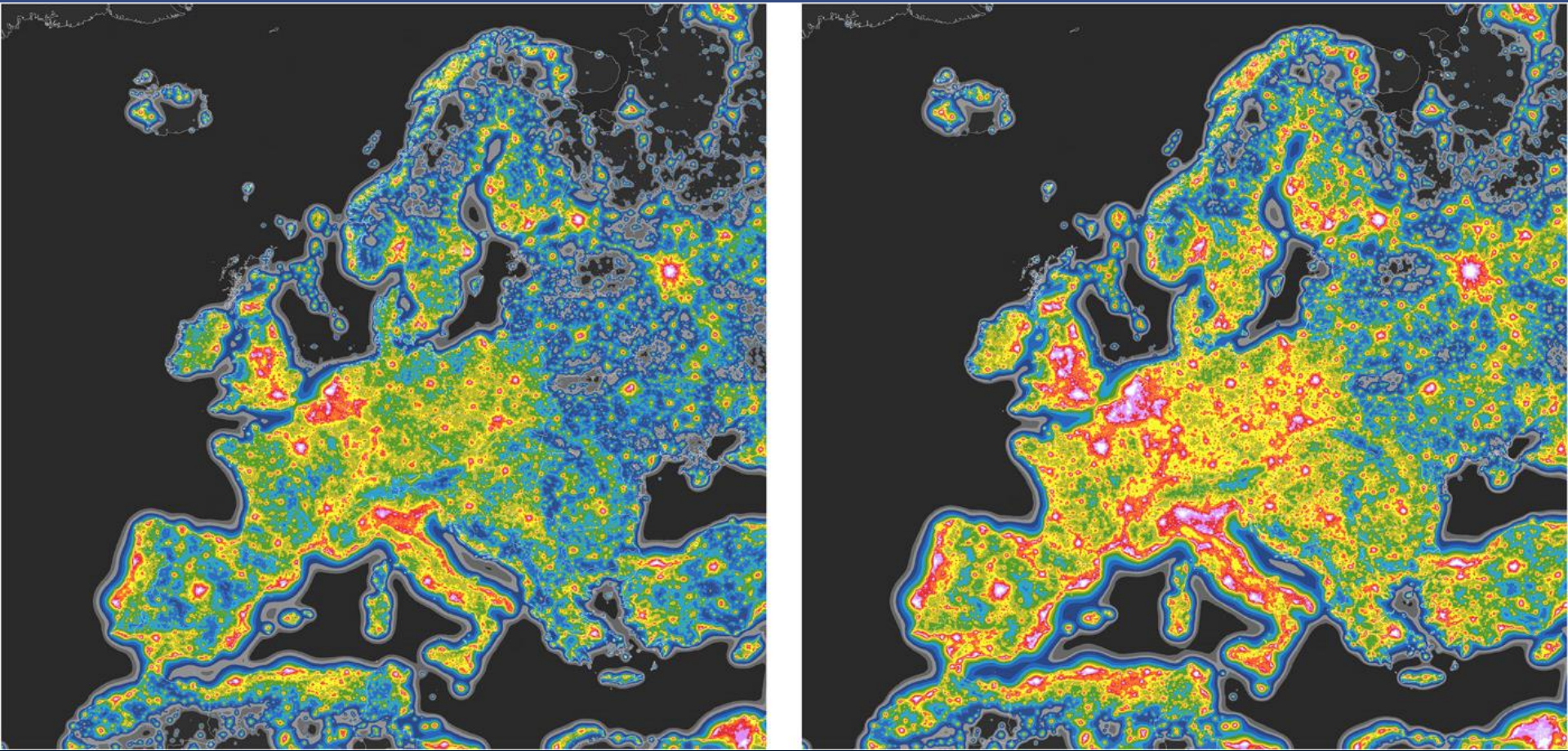
TESS measurements

Madrid
Observatorio
UCM

Villaverde del
Ducado

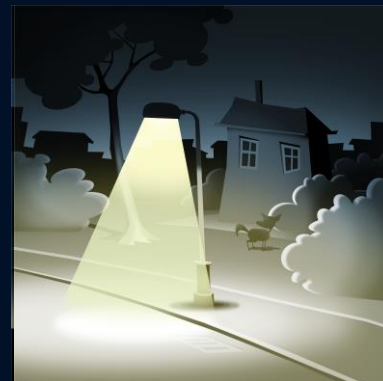


Increase of brightening when using 4000K LED



Regulation gaps

- To limit the light emission directed in the horizontal and above and in shallow downward angles
- To limit the exposure of bright light and particularly light with short wavelength, such as blue and UV-light
- To regulate the maximal intensity and defining scientifically justification for illumination levels in public lighting standards (e.g. EN13201)



Petition European Sky Protection (0362/2018)



Label for the quality of outdoor lighting companies – institutions – villages



Lamp design



Color



Intensity



Awareness



Night sky quality



Curfew



Energy efficiency



Photosensor



Label for sustainable outdoor lighting

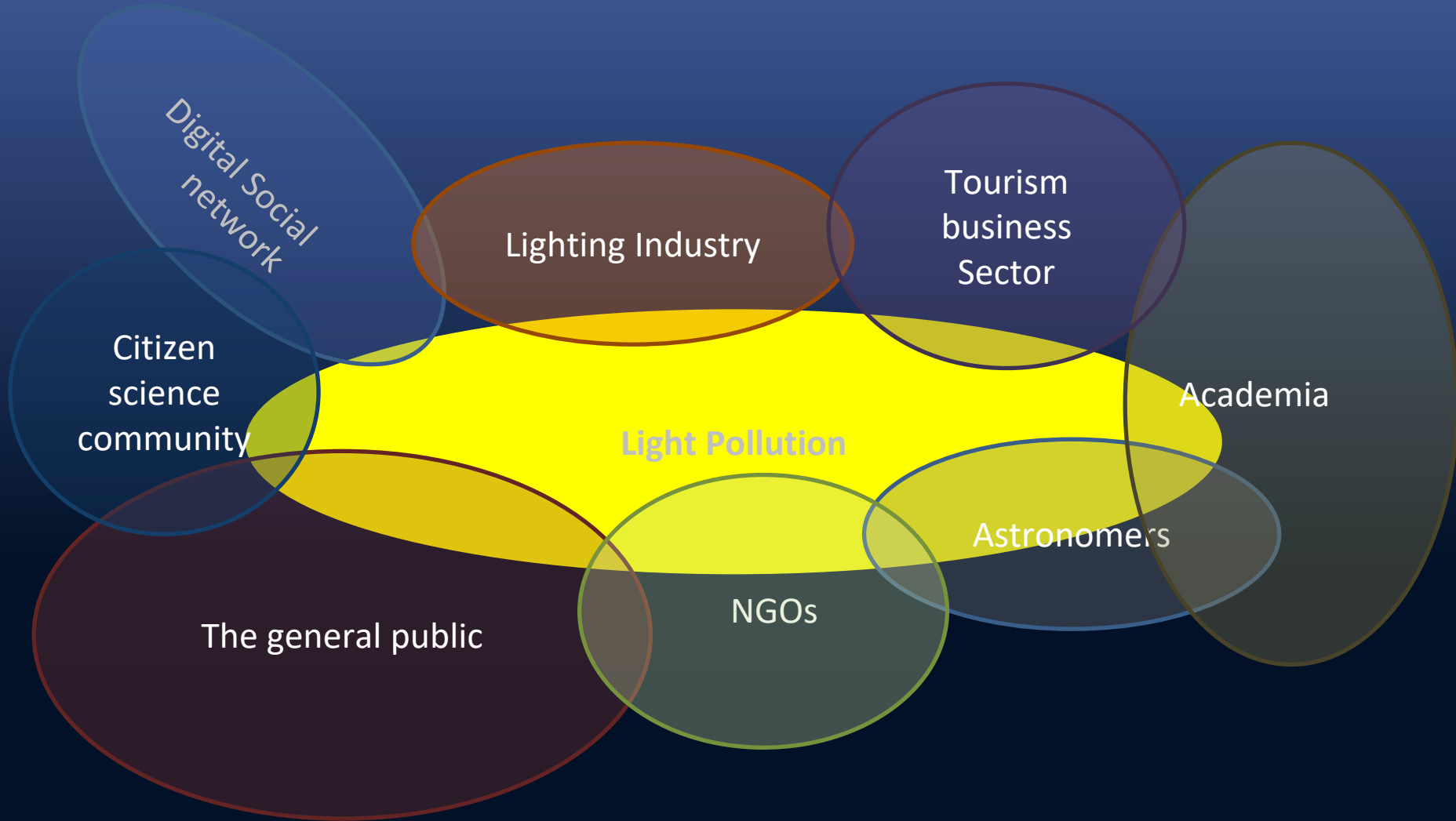


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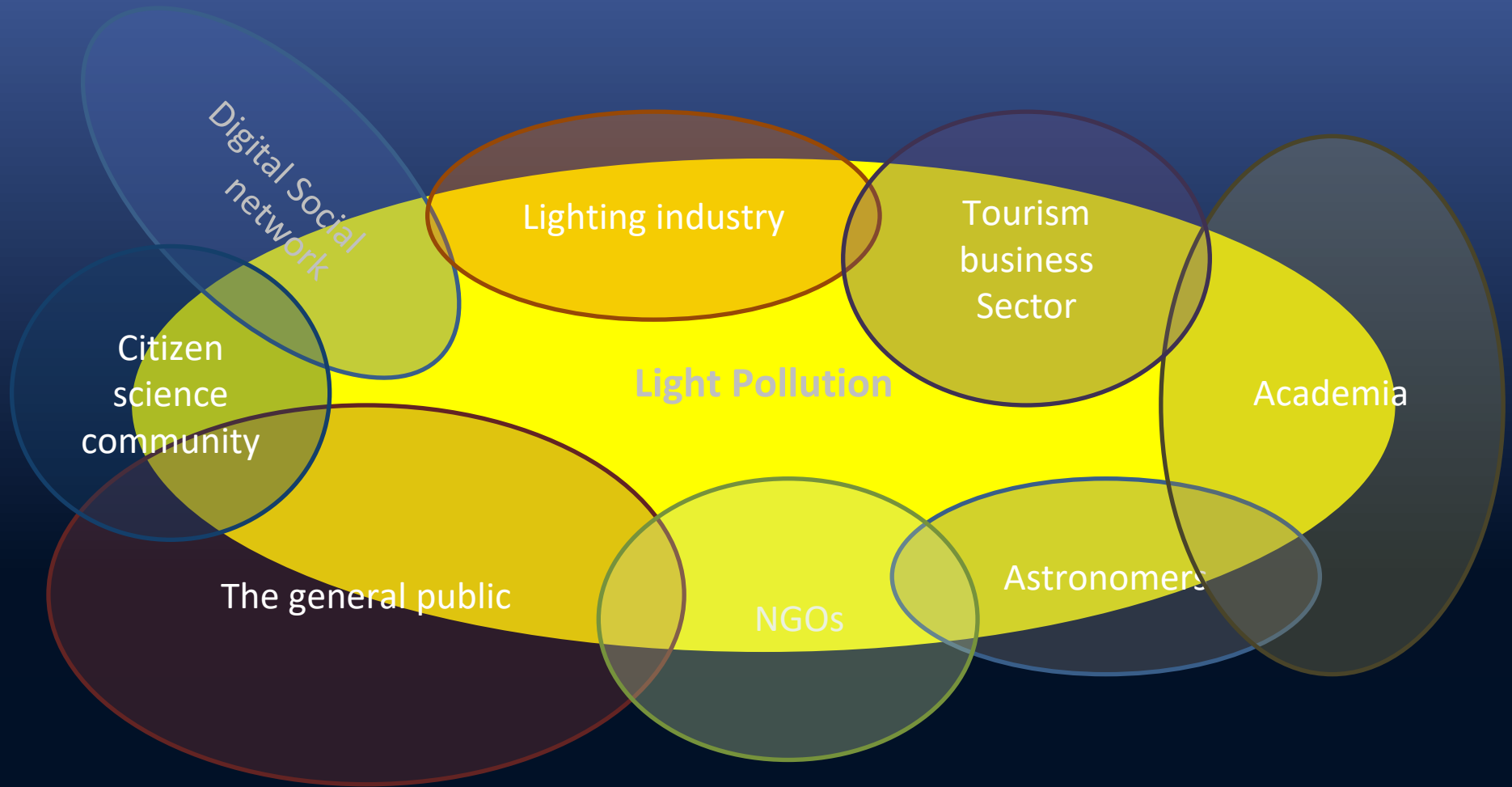


<https://www.tripadvisor.com/> Tharoo & Co
courtesy of TripAdvisor

Awareness



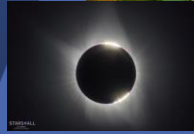
Awareness after 2018



Increase Awareness



Broadcastings



Gamification



STARS4ALL

Photometer Network



Foundation



Data Management & Open Access



€€ Crowdfunding & Marketplace



Sustainability & Community Health

- Community coordination
- Quality assessment
- Community health metrics



Initiatives



Citizen science and light pollution

Hecker, S., Haklay, M., Bowser, A., Makuch, Z., Vogel, J. & Bonn, A. (2018) *Citizen Science – Innovation in Open Science, Society and Policy*. UCL Press, London.

<https://www.ucl.ac.uk/ucl-press/browse-books/citizen-science>



Thank you!

STARS4ALL

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